SERVICE MANUAL

CDA-94

4822 725 50842

marantz®

model CDA-94

D/A Converter

MARANTZ DESIGN AND SERVICE

Using superior design and selected high grade components, MARANTZ company has created the ultimate in stereo sound.
Only **original MARANTZ parts** can insure that your MARANTZ product will continue to perform to the specifications for which it is famous.

Parts for your MARANTZ equipment are generally available to our National Marantz Subsidiary or Agent.

ORDERING PARTS:

Parts can be ordered either by mail or by telex. In both cases, correct part number has to be specified.

The following information must be supplied to eliminate delays in processing your order:
1. Complete address
2. Complete part numbers and quanties required
3. Description of parts
4. Model number for which part is required
5. Way of shipment
6. Signature: any order form or telex must be signed otherwise such part order will be considered as null and void.

TECHNICAL ASSISTANCE

Should you require any other technical support, do not hesitate to contact the Technical Department of
MARANTZ INTERNATIONAL
Quality & Service Dept.
80, Rue des Deux Gares,
B-1070 Brussels
Belgium
Phone: 02/525.70.22 or 525.70.23
Telefax: 02/525.6160
Telex: 23550 OR
61511 (PHEMB) routing: BELDMZT

PARTS ORDERING

Parts may be ordered at the following addresses:

AUSTRIA
HORNYPHON
Vertriebsgesellschaft GmbH
Wienerbergstrasse 1
A 1101 Wien
Austria
Telex: 132.332

AUSTRALIA
MARANTZ AUSTRALIA
PTY., Ltd.
19 Chard Road
Brookvale, NSW 2100
Australia
Telex: 24121

BELGIUM
SVD DIVISION MARANTZ
Industrialaan 1
1720 Groot-Bijgaarden
Belgium
Telex: 24466

CHILE
MARANTZ
DIVISION OF PHILIPS S.A.
AV. Santa Maria, 0760
Casilla 2687
Santiago
Telex: 240.239

DENMARK
MARANTZ
DIVISION OF PHILIPS
SERVICE A/S
Prags Boulevard 80
Postbox 1919
DK-2300 København S
Denmark
Telex: 31201

FINLAND
MARANTZ
DIVISION OF OY PHILIPS Ab
Kaivokatu 8
00100 Helsinki
Finland
Telex: 124811

FRANCE
MARANTZ FRANCE
4 Rue Bernard Palissy
92600 Asnières
France
Telex: 611651

GERMANY
MARANTZ GERMANY GmbH
Max-Planck-Strasse 22
6072 Dreieich 1
Germany
Telex: 529821

THE NETHERLANDS
Elpro b.v.
De Limiet 3
4131 NR Vianen
The Netherlands
Telex: 47679

NORWAY
MARANTZ
DIVISION OF PHILIPS A/S
Sandstuveien 40
Oslo 6
Norway
Telex: 72640

GREAT BRITAIN
MARANTZ AUDIO U.K. Ltd
Unit 15/16
Saxon Way Industrial Estate
Moor Lane
Harmondsworth UB7 OLW
Great Britain
Telex: 935196

GREECE
SHERTON ELECTRONICS S.A.
P.O.Box 21025
Hippocratus Street 188
Athens 11471
Greece
Telex: 216.795

JAPAN
MARANTZ JAPAN, Inc.
35-1, 7-chome, Sagamiono
Sagamihara-shi, Kanagawa
Japan

KUWAIT
AL ALAMIAH ELECTRONICS
Ussama Building
Fahd al Saleem Street
P.O.Box 23781
Safat-Kuwait
Telex: 22694

ITALY
MARANTZ ITALIANA S.P.A.
Via Chiese, 74
20126 Milano
Italy

SAUDI ARABIA
AL ALAMIAH ELECTRONICS
P.O.Box 5954
University Street
Riyadh 11432
Saudi Arabia
Telex: 201530

SOUTH AFRICA
MARANTZ
DIVISION OF PHILIPS S.A.
Rainer House
Ove Street, 10
Doornfontein
Johannesburg
Telex: 483.456

SPAIN
PHONO S.A.
Ignacio Iglesias 10
Badaiona (Barcelona)
Spain
Telex: 59355

SWEDEN
MARANTZ
DIVISION OF PHILIPS
Försäljning AB
Tegeluddsvägen 1
S-115 84 Stockholm
Sweden
Telex: 14060

SWITZERLAND
DYNAVOX ELECTRONICS
Route de Villars 105
1701 Fribourg
Switzerland
Telex: 942377

TURKEY
DOGRUOL Ltd.
I.M.C.
6 Blok N°6310
Unkapani
Istanbul
Turkey
Telex: 22085

MALTA
CACHIA & GALEA
Republic Street, 68D
Valetta
Telex: 1682

U.S.A.
MARANTZ COMPANY, Inc.
National Service Department
P.O.Box 577
Chatsworth, CA 91311
U.S.A.

All of the above locations are fully equipped to take care of your total service needs. Because various countries have differing configuration requirements, it is necessary that you contact the service facility in your particular country. In the event that there is no service location listed for your country, please, contact the nearest facility for the necessary assistance.

In case of difficulties, do not hesitate to contact the Technical Department at abovementioned address.

TABLE OF CONTENTS

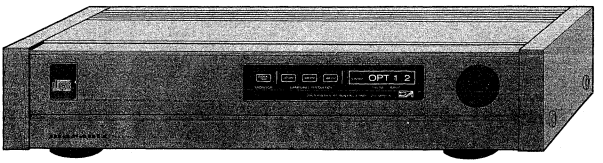
SECTION		PAGE
1.	P.W. BOARDS	1
2.	DESCRIPTION OF CIRCUIT OPERATION	2
3.	BLOCK DIAGRAM	3
4.	WIRING DIAGRAM	4
5.	COMPONENT LOCATIONS	6
6.	EXPLODED VIEW AND PARTS LIST	10
7.	ELECTRICAL PARTS LIST	14
8.	TECHNICAL SPECIFICATIONS	18
9.	SCHEMATIC DIAGRAM	20

How to use this service manual

- The "Common parts" which Marantz Japan, Inc. has established are eliminated from this service manual.
- These "Common parts" are applied to all models in the service manuals arranged and issued by MJI.
- To indicate clearly the common parts in the schematic diagram, a line is drawn above or under the Ref. Desig. No. of applicable parts.
- "Common parts" can be supplied from the Marantz service center as ever.
  In case of ordering, please establish the parts number of 12 N/C'S following the procedure mentioned in this service manual "How to establish the parts number for common parts".

1) Please correctly write the parts number of 12 N/C'S following the rule.

MODEL CDA-94 D/A CONVERTER



1. P.W. BOARDS

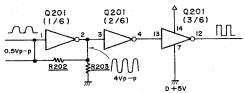
As can be seen from the circuit diagram the chassis of Model CDA-94 consists of the following units. Each unit mounted on a printed circuit board is discribed within the square enclosed by a bold dotted line on the circuit diagram.

1. **Audio DAC . . . . . mounted on P.W. Board PA16**
2. **Blance Amp. . . . . mounted on P.W. Board PA26**
3. **Conect . . . . . mounted on P.W. Board PC16**
4. **Digital . . . . . mounted on P.W. Board PD16**
5. **Power Switch . . . . . mounted on P.W. Board PH16**
6. **Digital In/Out Jack . . mounted on P.W. Board PJ16**
7. **Lamp . . . . . mounted on P.W. Board PL16**
8. **Power Supply . . . . . mounted on P.W. Board PP16**
9. **Function Switch . . . . mounted on P.W. Board PS16**
10. **Main Volume . . . . . mounted on P.W. Board PV16**

2. DESCRIPTION OF CIRCUIT OPERATION

1.1 Input Circuit

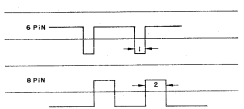
Q301 is a circuit which amplifies the 0.5Vp-p digital signal to the 5Vp-p TTL level and performs waveform shaping. Amplification is performed in the first stage, in which the signal is amplified to approximately 4Vp-p.
The invertors in the second and third stages perform waveform shaping, after which the signal is sent to the input selector circuit.



Q203 through Q205 form an input selector circuit with a NAND gate, and the circuit to which the 5V control voltage has been applied from the front board function switch (SS01) and monitor switch (SS02) is sent to the demodulator circuit in the next stage. At the same time, the selected source signal is output from the TAPE OUT terminal.

1.2 Demodulator and PLL Circuit

The demodulator and PLL block consists of Q301, Q303, Q351, and Q352 through Q354. This block has a variable resistor and is adjusted as follows:
After applying a signal to the input and turning R351 fully counterclockwise, turn it back gradually clockwise until the PLL locks (approximately 5 – 20 degrees). Next observe the Q301 pin 6 and pin 8 waveform with a two-channel synchro and readjust for 1 : 2 as shown in the diagram.



NOTE: Perform this adjustment with a sampling frequency of 48 kHz, and check that it locks at 44.1 kHz and 32 kHz.

Q352 through Q354 cut the high frequency component of the DC voltage in accordance with the phase changes from the phase comparator (pin 6, pin 8) in Q301, the PLL low pass filter, and supply the DC voltage to the Q351 VCO which follows.
Q303 is a pulse generator of approximately 330 Hz. When unlocked, it oscillates the VCO control voltage over a wide range, and when the input signal is input, it generates the discharge output to lock the PLL. Q355 is the switching FET for this purpose. D360 through D365 form the varistor for temperature compensation.

1.3 Digital Filter Block

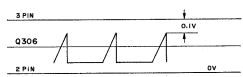
The three signals output from Q301 (DATA, BCK, LRCK) are sent to the Q302 digital filter in the following stage, converted into frequencies 4 times higher, then output. However, the reading timing of the Q302 data starts with a delay of one block, so data is delayed by one block by Q304 then sent to Q302.
When the PLL is unlocked, the clock for operating Q302 is oscillated, so the Q302 output data is oscillated, generating noise in the audio output. In order to prevent this, the clock is cut with the Q305 NAND gate switch when unlocked.

1.4 Photocoupler Block

Q371 through Q374 form a photocoupler which performs isolation when connecting the three outputs from the digital filter and the emphasis control signals to the audio circuitry in the following stage.

1.5 Sampling Frequency Display Block

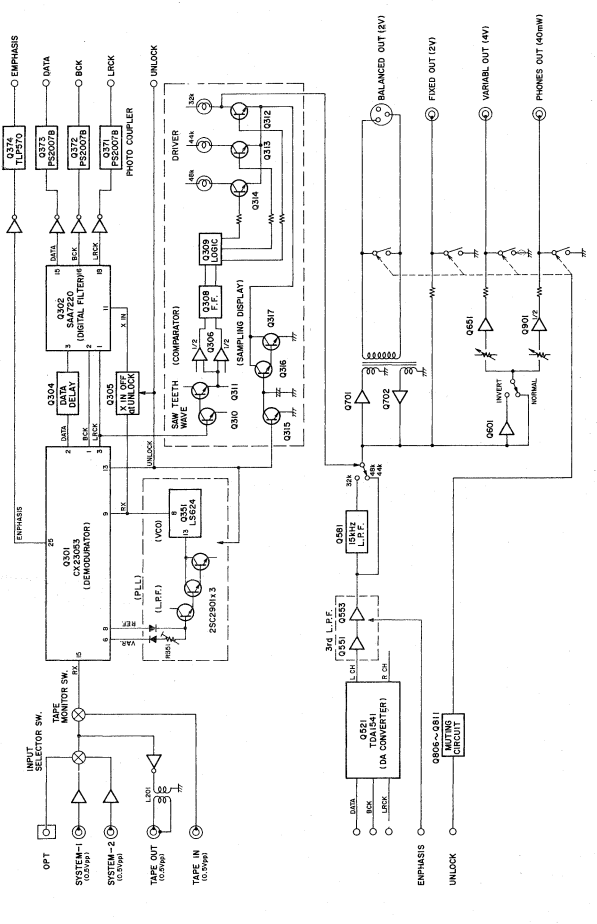
Q310 and Q311 convert the LRCK pulse waveform into a saw tooth waveform and obtain a peak value in accordance with the sampling frequency. Q306 is a comparator, 1/2 judging for 44.1 kHz and 48 kHz, 2/2 judging for 32 kHz. With 44.1 kHz and 48 kHz, the difference in the peak values is of approximately 0.6V. In order to prevent erroneous display, the comparator 1/2 reference voltage is adjusted as follows with R308.



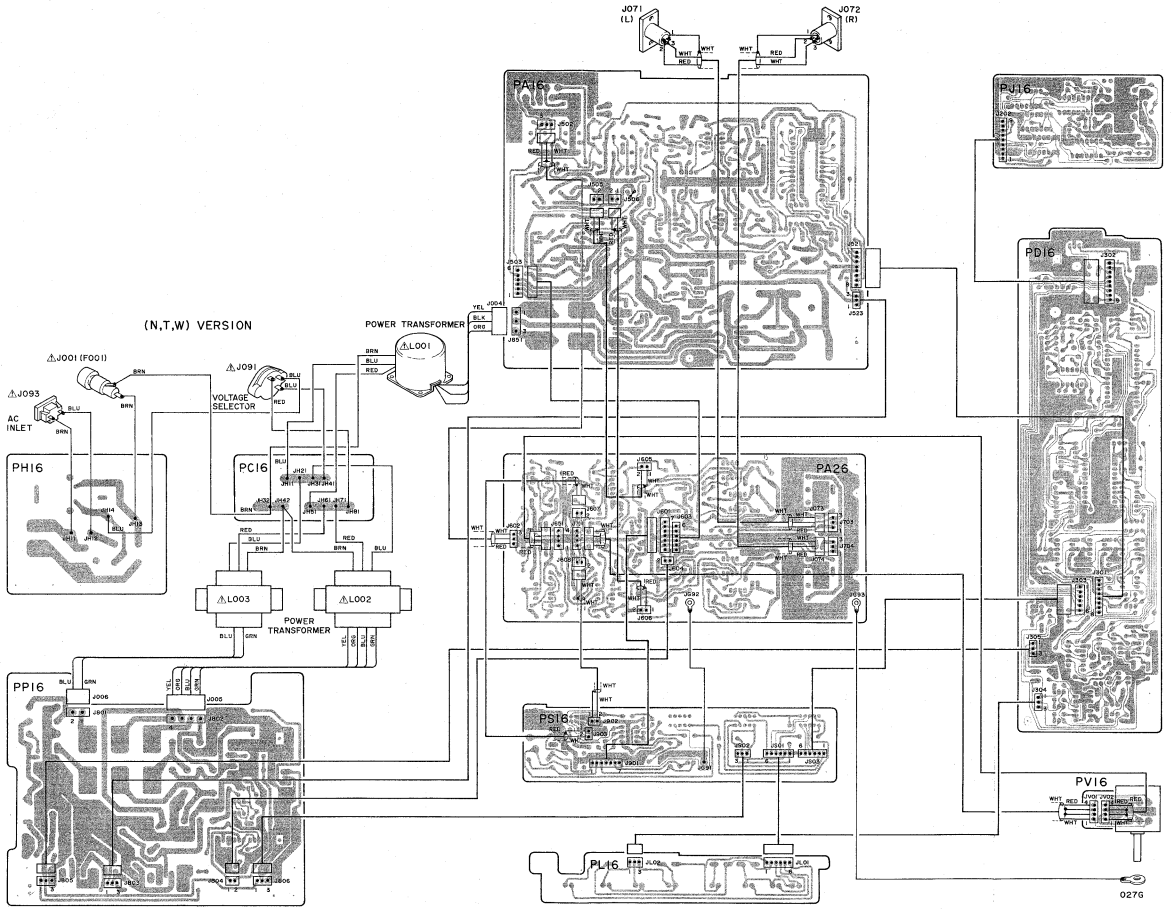
Apply a sampling frequency 48 kHz signal, observe the Q306 pin 3 and pin 2 waveforms, and adjust R308 so that the difference in voltage between the two is 0.1V.

For the comparator's two outputs, the sampling display driver transistor is driven by the Q308 and Q309 logic operation circuit. The logic operation circuit is a circuit for displaying one of the frequencies even if there is no input. Furthermore, for the comparator output, approximately 0.5 seconds are required from when the input signal is applied until operation becomes normal, so the display circuit is not operated when unlocked and for approximately 1 second after locked using Q315 through Q317.
The Q312 32 kHz display driver is also used as the audio circuit 15 kHz low pass filter on/off relay driver.

3. BLOCK DIAGRAM

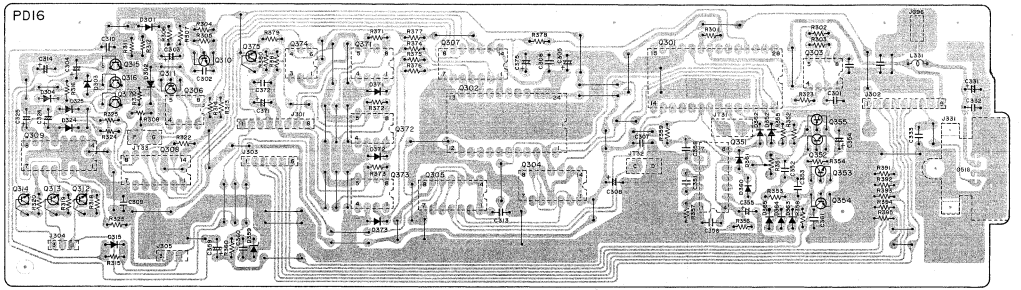


4. WIRING DIAGRAM

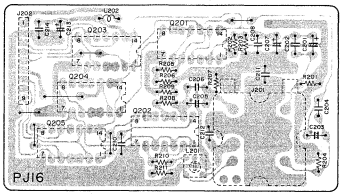


5. COMPONENT LOCATIONS

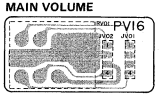
DIGTAL



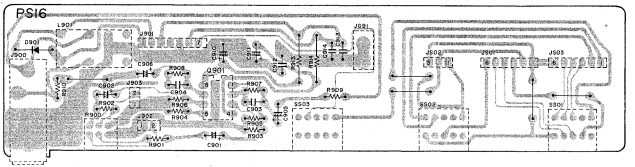
DIGTAL IN/OUT JACK



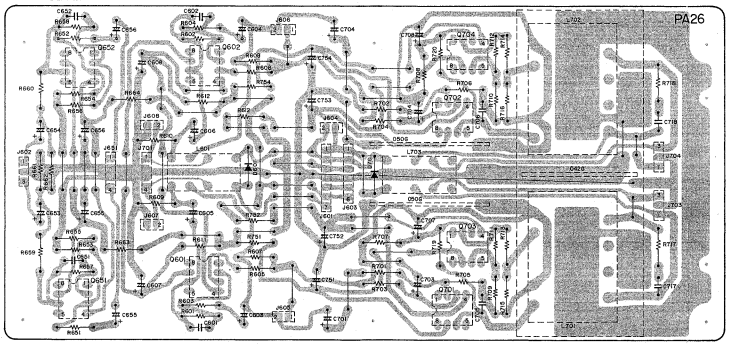
MAIN VOLUME



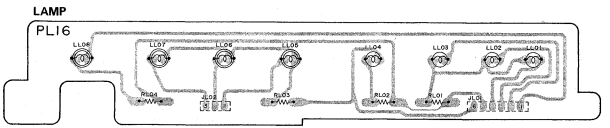
FUNCTION SWITCH



BALANCE AMP

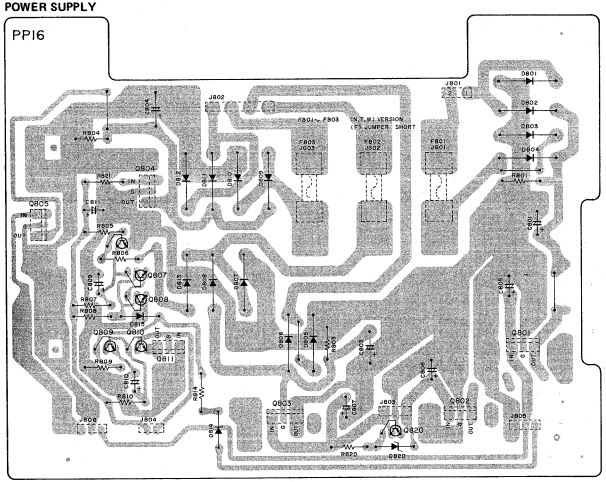


LAMP



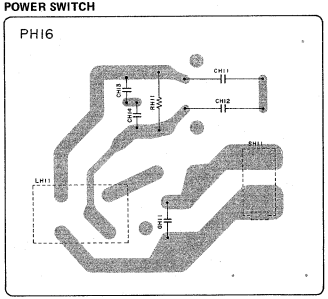
POWER SUPPLY

PPI6



POWER SWITCH

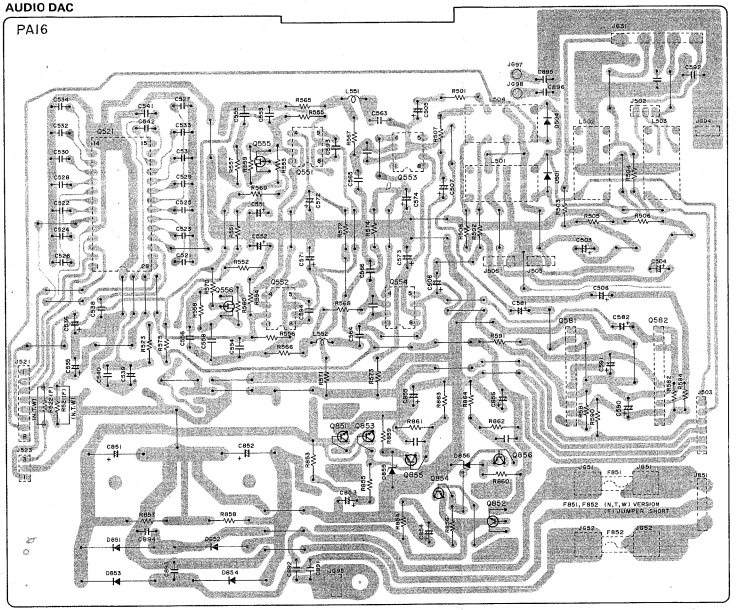
PHI6



(N,T,W) VERSION

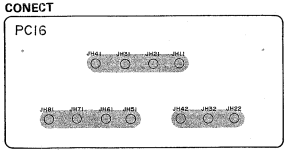
AUDIO DAC

PAI6



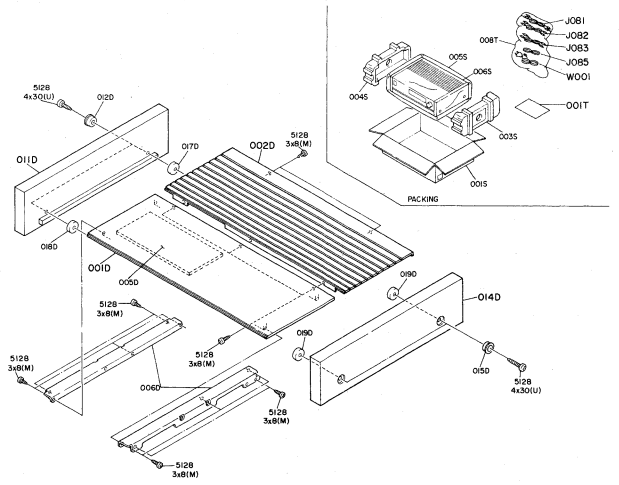
CONECT

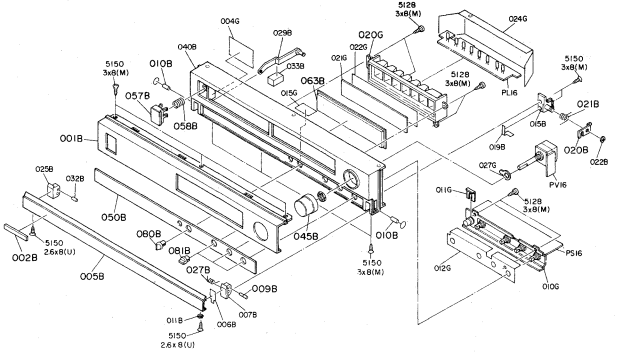
PCI6



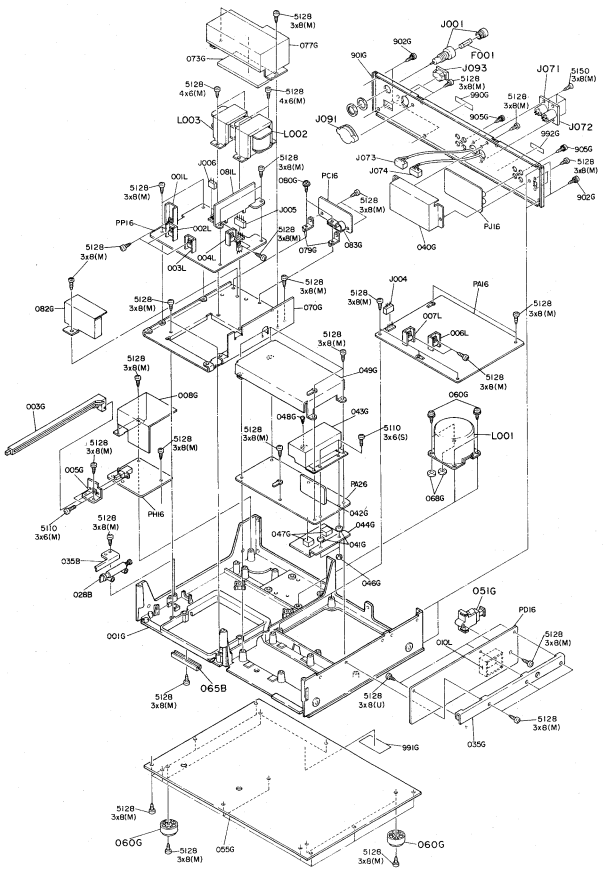
(N,T,W) VERSION

6. EXPLODED VIEW AND PARTS LIST





REF. DESIG.	PART NO.	DESCRIPTION
001B	4822 426 51236	Front Panel (BLK)
	4822 426 51264	Front Panel (GLD)
002B	4822 454 11825	Badge
005B	4822 454 40113	Escutcheon, Door (BLK)
	4822 454 40116	Escutcheon, Door (GLD)
009B	4822 535 92367	Shaft, Lock
010B	4822 535 92368	Shaft, Hinge
020B	4822 402 61096	Hook, Lock
021B	4822 492 42171	Spring, Lock
027B	4822 492 42172	Spring, Hinge Open
045B	4822 413 41314	Knob, Output Volume (BLK)
	4822 413 41425	Knob, Output Volume (GLD)
050B	4822 454 40114	Escutcheon, Door (BLK)
	4822 454 40117	Escutcheon, Door (GLD)
057B	4822 410 26142	Button, Power (BLK)
	4822 410 26282	Button, Power (GLD)
058B	4822 492 51927	Spring, Power Button
063B	4822 450 61022	Window
080B	4822 412 20979	Knob, Level (BLK)
	4822 412 21006	Knob, Level (GLD)
081B	4822 412 20997	Knob, Rotary (BLK)
	4822 412 21007	Knob, Rotary (GLD)
001D	4822 426 51234	Lid, Top Cover; Front (BLK)
	4822 426 51262	Lid, Top Cover; Front (GLD)
002D	4822 426 51235	Lid, Top Cover; Rear (BLK)
	4822 426 51263	Lid, Top Cover; Rear (GLD)
011D	4822 426 30135	Side Panel (L), Wood (BLK)
014D	4822 426 30136	Side Panel (R), Wood (BLK)
020G	4822 256 91246	Holder, Lamp
		PACKING
001T	4822 736 13697	User Manual
J081	4822 321 22084	Connective Cord, Audio
J082	4822 321 22571	Connective Cord, Digital
J083	4822 321 22568	Connective Cord, Optical Fiber
J085	4822 321 22569	Connective Cord, Optical Fiber
⚠ W001	4822 321 21123	A.C. Power Cord



REF. DESIG.	PART NO.	DESCRIPTION
065B	4822 443 51101	Cover
051G	4822 256 91247	Holder, Optical
060G	4822 462 41189	Leg
⚠ F001	4822 253 30012	Fuse T200mA
⚠ J001	4822 256 30233	Jack, Fuse Holder
J071	4822 264 10226	Plug (L), Cannon
J072	4822 264 10226	Plug (R), Cannon
⚠ J091	4822 272 10236	Voltage Selector
⚠ J093	4822 265 20222	Plug, AC Inlet
⚠ L001	4822 148 80791	Power Transformer
⚠ L002	4822 148 80789	Power Transformer
⚠ L003	4822 148 80788	Power Transformer

7. ELECTRICAL PARTS LIST

ASSIGNMENT OF COMMON PARTS CODES.

RESISTOR

R****: (1) GD05 ··· 140, Carbon film fixed resistor, ±5%, 1/4W
R****: (2) GD05 ··· 160, Carbon film fixed resistor, ±5%, 1/6W

① — Resistance value

Examples
① Resistance value
0.1Ω...001 10Ω...100 1kΩ...102 100kΩ...104
0.5Ω...005 18Ω...180 2.7kΩ...272 680kΩ...684
1Ω...010 100Ω...101 10kΩ...103 1MkΩ...105
6.8Ω...068 390Ω...391 22kΩ...223 4.7MkΩ...475

Note) Please distinguish 1/4W from 1/6W by the shape of parts used actually.

C****: CERAMIC CAP.
(1) DD1 ··· 370, Ceramic condenser
Disc type
①②
Temp. coeff. P350 ~ N1000, 50V
Capacity value
Tolerance

Examples
① Tolerance (Capacity deviation)
±0.25pF...0
±0.5pF...1
±5%...5
* Tolerance of COMMON PARTS handled here are as follows:
0.5pF ~ 5pF ±0.25pF
6pF ~ 10pF...±0.5pF
12pF ~ 560pF...±5%
② Capacity value
0.5pF...005 3pF...030 100pF...101
1pF...010 10pF...100 220pF...221
1.5pF...015 47pF...470 560pF...561

C****: CERAMIC CAP.
(1) DK16 ··· 300, High dielectric constant ceramic condenser
Disc type
①
Temp. chara. 2B4, 50V
Capacity value

Example
② Capacity value
100pF...101 1000pF...102 10000pF...103
470pF...471 2200pF...222

C****: ELECTROLY CAP. (⏚), FILM CAP. (⏚)
(1) EA ····· 10, Electrolytic condenser
One-way lead type, Tolerance ±20%
①②
Dielectric strength
Capacity value

Examples
① Capacity value
0.1μF...104 4.7μF...475 100μF...107
0.33μF...334 10μF...106 330μF...337
1μF...105 22μF...226 1100μF...108
2200μF...228
② Working voltage
6.3V...006 25V...025
10V...010 35V...035
16V...016 50V...050

(2) DF15 ··· 350, Plastic film condenser
One-way type, Mylar ±5% 50V
①
Capacity value

Examples
① Capacity value
0.001μF (1000pF)...102 0.1μF...104
0.0018μF.....182 0.56μF...564
0.01μF.....103 1μF...105
0.015μF.....153

REF. DESIG.	PART NO.	DESCRIPTION		
		PA16-AUDIO DAC CIRCUIT BOARD		
		PA16-CAPACITORS		
C503	4822 124 22238	Elect	100μF	25V
C504	4822 124 22238	Elect	100μF	25V
C505	4822 124 90387	Elect	220μF	6.3V
C506	4822 124 90387	Elect	220μF	6.3V
C507	4822 124 90387	Elect	220μF	6.3V
C508	4822 124 90387	Elect	220μF	6.3V
C521				
C533	4822 121 42759	Film	0.22μF ±5%	
C534				
C535	4822 124 90058	Elect	47μF	25V
C536	4822 124 90058	Elect	47μF	25V
C537	4822 121 42764	Film	0.047μF ±5%	
C538	4822 121 42764	Film	0.047μF ±5%	
C539	4822 124 90058	Elect	47μF	25V
C540	4822 121 42764	Film	0.047μF ±5%	
C541	4822 121 42764	Film	0.047μF ±5%	
C542	4822 121 42713	Film	680pF ±5%	
C551	4822 124 90386	Elect	10μF	25V
C552	4822 124 90386	Elect	10μF	25V
C553	4822 121 51126	Film	2200pF ±2%	
C554	4822 121 51126	Film	2200pF ±2%	
C555	4822 121 42982	Film	0.015μF ±2%	
C556	4822 121 42982	Film	0.015μF ±2%	
C557	4822 121 51127	Film	5100pF ±2%	
C558	4822 121 51127	Film	5100pF ±2%	
C563	4822 121 51126	Film	2200pF ±2%	
C564	4822 121 51126	Film	2200pF ±2%	
C565	4822 121 51144	Film	1000pF ±2%	
C566	4822 121 51144	Film	1000pF ±2%	
C571	4822 124 22238	Elect	100μF	25V
C572	4822 124 22238	Elect	100μF	25V
C573	4822 124 22238	Elect	100μF	25V
C574	4822 124 22238	Elect	100μF	25V
C581	4822 124 22237	Elect	10μF	16V
C582	4822 124 22237	Elect	10μF	16V
C590	4822 124 22238	Elect	100μF	25V
C591	4822 124 22238	Elect	100μF	25V
C592	4822 122 40491	Ceramic	0.022μF	
C717	4822 121 42982	Film	0.015μF ±2%	
C718	4822 121 42982	Film	0.015μF ±2%	
C853	4822 124 90058	Elect	47μF	25V
C854	4822 124 90058	Elect	47μF	25V
C855	4822 124 22242	Elect	470μF	25V
C856	4822 124 22242	Elect	470μF	25V
		PA16-RESISTORS (All Resistors are ±5% and 1/4W)		
R555	4822 116 53297	1.78KΩ	±2%	
R556	4822 116 53297	1.78KΩ	±2%	
R557	4822 116 53108	1KΩ	±2%	
R558	4822 116 53108	1KΩ	±2%	
R565	4822 116 80262	2.37KΩ	±2%	
R566	4822 116 80262	2.37KΩ	±2%	
R567	4822 116 80262	2.37KΩ	±2%	
R568	4822 116 80262	2.37KΩ	±2%	
⚠R571	4822 116 60446	3.3Ω, Fusible		
⚠R572	4822 116 60446	3.3Ω, Fusible		

REF. DESIG.	PART NO.	DESCRIPTION		
⚠R573	4822 116 60446	3.3Ω, Fusible		
⚠R574	4822 116 60446	3.3Ω, Fusible		
⚠R590	4822 116 60446	3.3Ω, Fusible		
⚠R591	4822 116 60446	3.3Ω, Fusible		
R853	4822 116 53214	562Ω	±2%	
R854	4822 116 53214	562Ω	±2%	
R855	4822 116 53079	3.83KΩ	±2%	
R856	4822 116 53079	3.83KΩ	±2%	
R859	4822 116 52956	1.21KΩ	±2%	
R860	4822 116 52956	1.21KΩ	±2%	
R861	4822 116 53791	1.54KΩ	±2%	
R862	4822 116 53791	1.54KΩ	±2%	
R863	4822 116 52956	1.21KΩ	±2%	
R864	4822 116 52956	1.21KΩ	±2%	
		PA16-SEMICONDUCTORS		
D501	4822 130 33065	Diode	1SS81	
D504	4822 130 33065	Diode	1SS81	
D601	4822 130 33065	Diode	1SS81	
D701	4822 130 33065	Diode	1SS81	
⚠D851	4822 130 33074	Diode	30DF2	
⚠D852	4822 130 33074	Diode	30DF2	
⚠D853	4822 130 33074	Diode	30DF2	
⚠D854	4822 130 33074	Diode	30DF2	
⚠D855	4822 130 31623	Zener	RD5.6E	
⚠D856	4822 130 31623	Zener	RD5.6E	
Q521	4822 209 70295	IC	TDA1541	
Q551	4822 209 70226	IC	NJM5534D	
Q552	4822 209 70226	IC	NJM5534D	
Q553	4822 209 70226	IC	NJM5534D	
Q554	4822 209 70226	IC	NJM5534D	
Q555	4822 130 42842	F.E.T.	2SK372(GR/BL)	
Q556	4822 130 42842	F.E.T.	2SK372(GR/BL)	
⚠Q581	4822 209 72326	IC	AFL87F1500E1	
⚠Q582	4822 209 72326	IC	AFL87F1500E1	
Q851	4822 130 43311	Transistor	2SC3298(Q, R)	
Q852	4822 130 43023	Transistor	2SA1306(Q, R)	
Q853	4822 130 60367	Transistor	2SC945	
Q854	4822 130 41732	Transistor	2SA773	
Q855	4822 130 42052	Transistor	2SC2785	
Q856	4822 130 42591	Transistor	2SA1175	
		PA16-MISCELLANEOUS		
⚠F851	4822 253 30017	Fuse	T500mA	
⚠F852	4822 253 30017	Fuse	T500mA	
JG51	4822 256 30239	Jack, Fuse Holder		
JG52	4822 256 30239	Jack, Fuse Holder		
J631	4822 265 30587	Terminal, 4P		
L501	4822 280 20285	Relay, SV-12		
L502	4822 280 20285	Relay, SV-12		
L503	4822 280 20285	Relay, SV-12		
L504	4822 280 20285	Relay, SV-12		

REF. DESIG.	PART NO.	DESCRIPTION		
		PA26-BALANCE AMP CIRCUIT BOARD		
		PA26-CAPACITORS		
C601	4822 123 30086	Mica	47pF ±5%	
C602	4822 123 30086	Mica	47pF ±5%	
C603	4822 124 22237	Elect	10μF	16V
C604	4822 124 22237	Elect	10μF	16V
C605	4822 124 22237	Elect	10μF	16V
C606	4822 124 22237	Elect	10μF	16V
C607	4822 124 22238	Elect	100μF	25V
C608	4822 124 22238	Elect	100μF	25V
C651	4822 123 30086	Mica	47pF ±5%	
C652	4822 123 30086	Mica	47pF ±5%	
C653	4822 124 22238	Elect	100μF	25V
C654	4822 124 22238	Elect	100μF	25V
C701	4822 124 90389	Elect	4.7μF	25V
C702	4822 124 90389	Elect	4.7μF	25V
C703	4822 124 90389	Elect	4.7μF	25V
C704	4822 124 90389	Elect	4.7μF	25V
C705	4822 121 43082	Film	1000pF ±2%	
C706	4822 121 43082	Film	1000pF ±2%	
C707	4822 122 40614	Elect	100μF	25V
C708	4822 122 40614	Elect	100μF	25V
C751	4822 124 22238	Elect	100μF	25V
C752	4822 124 22238	Elect	100μF	25V
C753	4822 124 22238	Elect	100μF	25V
C754	4822 124 22238	Elect	100μF	25V
		PA26-RESISTORS (All Resistors are ±5% and 1/4W)		
⚠R751	4822 116 60446	3.3Ω, Fusible		
⚠R752	4822 116 60446	3.3Ω, Fusible		
⚠R753	4822 116 60446	3.3Ω, Fusible		
⚠R754	4822 116 60446	3.3Ω, Fusible		
		PA26-SEMICONDUCTORS		
Q601	4822 209 70226	IC	NJM5534D	
Q602	4822 209 70226	IC	NJM5534D	
Q651	4822 209 70226	IC	NJM5534D	
Q652	4822 209 70226	IC	NJM5534D	
Q701	4822 209 70226	IC	NJM5534D	
Q702	4822 209 70226	IC	NJM5534D	
Q703	4822 209 70226	IC	NJM5534D	
Q704	4822 209 70226	IC	NJM5534D	
		PA26-MISCELLANEOUS		
L601	4822 280 20285	Relay, SV-12		
L701	4822 148 80787	Output Transformer, Line L		
L702	4822 148 80787	Output Transformer, Line R		
L703	4822 280 20285	Relay, SV-12		
		PD16-DIGITAL CIRCUIT BOARD		
		PD16-CAPACITORS		
C302	4822 121 42327	Film	470pF ±5%	
C333	4822 122 40615	Ceramic	39pF ±5%	
C351	4822 122 40613	Ceramic	27pF ±5%	
C353	4822 121 42327	Film	470pF ±5%	
		PD16-RESISTORS		
R308	4822 100 20524	4.7KΩ, Trimming		
R351	4822 100 20524	4.7KΩ, Trimming		

REF. DESIG.	PART NO.	DESCRIPTION
		PD16-SEMICONDUCTORS
D301	4822 130 33305	Diode 1SS133, etc.
D302	4822 130 80509	Varistor MA27W-B
D352	4822 130 33305	Diode 1SS133, etc.
D359	4822 130 80318	Zener RD6.8EB2
D360 ~ D365	4822 130 80302	Varistor MA27A
D371 ~ D374	4822 130 33305	Diode 1SS133, etc.
Q301	4822 209 72325	IC CX23053
Q302	4822 209 11157	IC SAA7220
Q303	4822 209 72327	IC NJM555D
Q304	4822 209 72333	IC TC74HC74P
Q305	4822 209 72322	IC TC74H00P
Q306	4822 209 72328	IC TA75393P
Q307	4822 209 72323	IC TC74HCU04P
Q308	4822 209 72333	IC TC74HC74P
Q309	4822 209 72334	IC TC74HC85P
Q310	4822 130 60846	Transistor 2SC2901(K)
Q311	4822 130 60846	Transistor 2SC2901(K)
Q312 ~ Q317	4822 130 42483	Transistor 2SC536SP, etc.
Q351	4822 209 72355	IC LS624
Q352	4822 130 60846	Transistor 2SC2901(K)
Q353	4822 130 60846	Transistor 2SC2901(K)
Q354	4822 130 60846	Transistor 2SC2901(K)
Q355	4822 130 60847	F.E.T. 2SJ72
Q371	4822 209 72331	IC PS2007B
Q372	4822 209 72331	IC PS2007B
Q373	4822 209 72331	IC PS2007B
Q374	4822 209 72329	IC TLP570
Q375	4822 130 42715	Transistor 2SA608SP, etc.
		PD16-MISCELLANEOUS
J331	4822 264 30217	Jack, Optical Input
L331	4822 156 10676	Choke Coil, 47μH
		PH16-POWER SWITCH CIRCUIT BOARD
⚠ GH11	4822 122 40305	Ceramic Cap. 0.1μF 400V
⚠ SH11	4822 276 11141	Push Switch, Power
		PJ16-DIGITAL IN/OUT JACK CIRCUIT BOARD
		PJ16-RESISTORS
R201	4822 116 80417	75Ω ±2% 1/6W
R204	4822 116 80417	75Ω ±2% 1/6W
R207	4822 116 80417	75Ω ±2% 1/6W
		PJ16-SEMICONDUCTORS
Q201	4822 209 72323	IC TC74HCU04P
Q202	4822 209 72323	IC TC74HCU04P
Q203	4822 209 72322	IC TC74HC00P
Q204	4822 209 72322	IC TC74HC00P
Q205	4822 209 72322	IC TC74HC00P

REF. DESIG.	PART NO.	DESCRIPTION
		PJ16-MISCELLANEOUS
J201	4822 265 30588	Terminal, 4P
L201	4822 142 60388	Pulse Transformer
L202	4822 156 10676	Choke Coil, 47μH
		PL16-LAMP CIRCUIT BOARD
LL01 ~ LL04	4822 111 20383	Lamp BQ041-32210A
LL05 ~ LL08	4822 134 40854	Lamp 60mA 12V
		PP16-POWER SUPPLY CIRCUIT BOARD
		PP16-CAPACITORS
C801	4822 124 22243	Elect 6800μF 16V
C803	4822 124 90388	Elect 3300μF 16V
C804	4822 124 90388	Elect 3300μF 16V
C805	4822 124 22439	Elect 6800μF 10V
⚠ C851	4822 124 22441	Elect 8200μF 35V
⚠ C852	4822 124 22441	Elect 8200μF 35V
		PP16-SEMICONDUCTORS
⚠ D801 ~ ⚠ D804 ⚠ D805	4822 130 33056	Diode U05B
~ ⚠ D808 ⚠ D809	4822 130 32155	Diode W06B
~ ⚠ D812	4822 130 33056	Diode U05B
⚠ D813	4822 130 32155	Diode W06B
D814	4822 130 31018	Diode 1SS1555
D815	4822 130 31018	Diode 1SS1555
⚠ D820	4822 130 33081	Zener MA1047-M
⚠ Q801	4822 209 83824	IC NJM78M05A
⚠ Q802	4822 209 83824	IC NJM78M05A
⚠ Q803	4822 209 72332	IC NJM79M06A
⚠ Q804	4822 209 70084	IC NJM78M12A
⚠ Q805	4822 209 70084	IC NJM78M12A
Q806 ~ Q810	4822 130 42483	Transistor 2SC536SP, etc.
Q811	4822 130 43311	Transistor 2SC3298(Q, R)
Q820	4822 130 41732	Transistor 2SA608SP; etc.
		PP16-MISCELLANEOUS
⚠ F801	4822 253 30021	Fuse T1A
⚠ F802	4822 253 30014	Fuse T315mA
⚠ F803	4822 253 30021	Fuse T1A
JG01	4822 256 30239	Jack, Fuse Holder
JG02	4822 256 30239	Jack, Fuse Holder
JG03	4822 256 30239	Jack, Fuse Holder

REF. DESIG.	PART NO.	DESCRIPTION
		PS16-FUNCTION SWITCH CIRCUIT BOARD
		PS16-RESISTORS
R900	4822 100 20632	10KΩ(A), Variable
R913	4822 111 20384	6.8Ω ±5% ½W
R914	4822 111 20384	6.8Ω ±5% ½W
		PS16-SEMICONDUCTORS
D901	4822 130 33065	Diode 1SS81
Q901	4822 209 83654	IC NJM4556D
		PS16-MISCELLANEOUS
JG91	4822 265 10158	Plug, 2P
J900	4822 267 30617	Jack, Headphone
L901	4822 280 20285	Relay SV-12
SS01	4822 273 50297	Rotary Switch
SS02	4822 273 40384	Rotary Switch
SS03	4822 273 40384	Rotary Switch
		PV16-MAIN VOLUME CIRCUIT BOARD
RV01	4822 100 20665	Variable Resistor, 10KΩ(A)

(W01-99)	Assembly and Wiring
(T01-99)	Adjustment
(X01-00)	Correction

NOTE ON SAFETY :
Symbol ⚠ Fire or electrical shock hazard. Only original parts should be used to replace any part marked with symbol ⚠. Any other component substitution (other than original type), may increase risk of fire or electrical shock hazard.

I. TECHNICAL SPECIFICATIONS

igital Input Jacks

SYSTEM 1,2 ..... Input level: 0.5 Vp-p
Input impedance: 75 ohms

OPTICAL Input ..... Input level: −15 to −23 dBm

igital Tape Recorder Jacks

Input Jack ..... Input level: 0.5 Vp-p
Input impedance: 75 ohms

Output Jack ..... Output level: 0.5 Vp-p
Output impedance: 75 ohms

nalog Output Jacks

FIXED Output Jacks ..... Output level: 2V RMS
Output impedance: 100 ohms
Optimum load impedance: 10k ohms or more

VARIABLE Output Jacks ..... Max. output level: 4V RMS
Output impedance: 100 ohms
Optimum load impedance: 10 k ohms or more

BALANCED Output Jack ..... Output level: 2V RMS
Output impedance: 100 ohms
Optimum load impedance:
Balanced: 600 ohms
Unbalanced: 600 ohms to 50k ohms

EADPHONE Output Jack ..... Output level: 8 ohms/14 mW
(THD = 0.1%) 32 ohms/45 mW
200 ohms/100 mW
600 ohms/75 mW
Output impedance: 220 ohms
Optimum load impedance: 8 ohms to 1000 ohms

lumber of Channels ..... 2 channels, stereo
igital/Analogue Converter ..... 16-bit fourfold over sampling
ampling Frequencies ..... 32 kHz, 44.1 kHz, and 48 kHz
(Automatic selection)

requency Response (with input of 44.1 kHz fs)

FIXED Output Jacks ..... 2 Hz to 20 kHz ±0.1 dB
VARIABLE Output Jacks ..... 2 Hz to 20 kHz ±0.1 dB
(With OUTPUT level set to MAX)
BALANCED Output Jack ..... 20 Hz to 20 kHz ±0.3 dB

ignal-to-Noise Ratio ..... 101 dB or better
ynamic Range ..... 96 dB or better
hannel Separation ..... 90 dB or better (at 1 kHz)
otal Harmonic Distortion ..... 0.0015% (at 1 kHz)

ower Requirements ..... AC 220/240V, 50/60 Hz
ower Consumption ..... 25 watts
imensions (W x H x D) ..... 462 x 87 x 333 mm
/eight ..... 11 kg

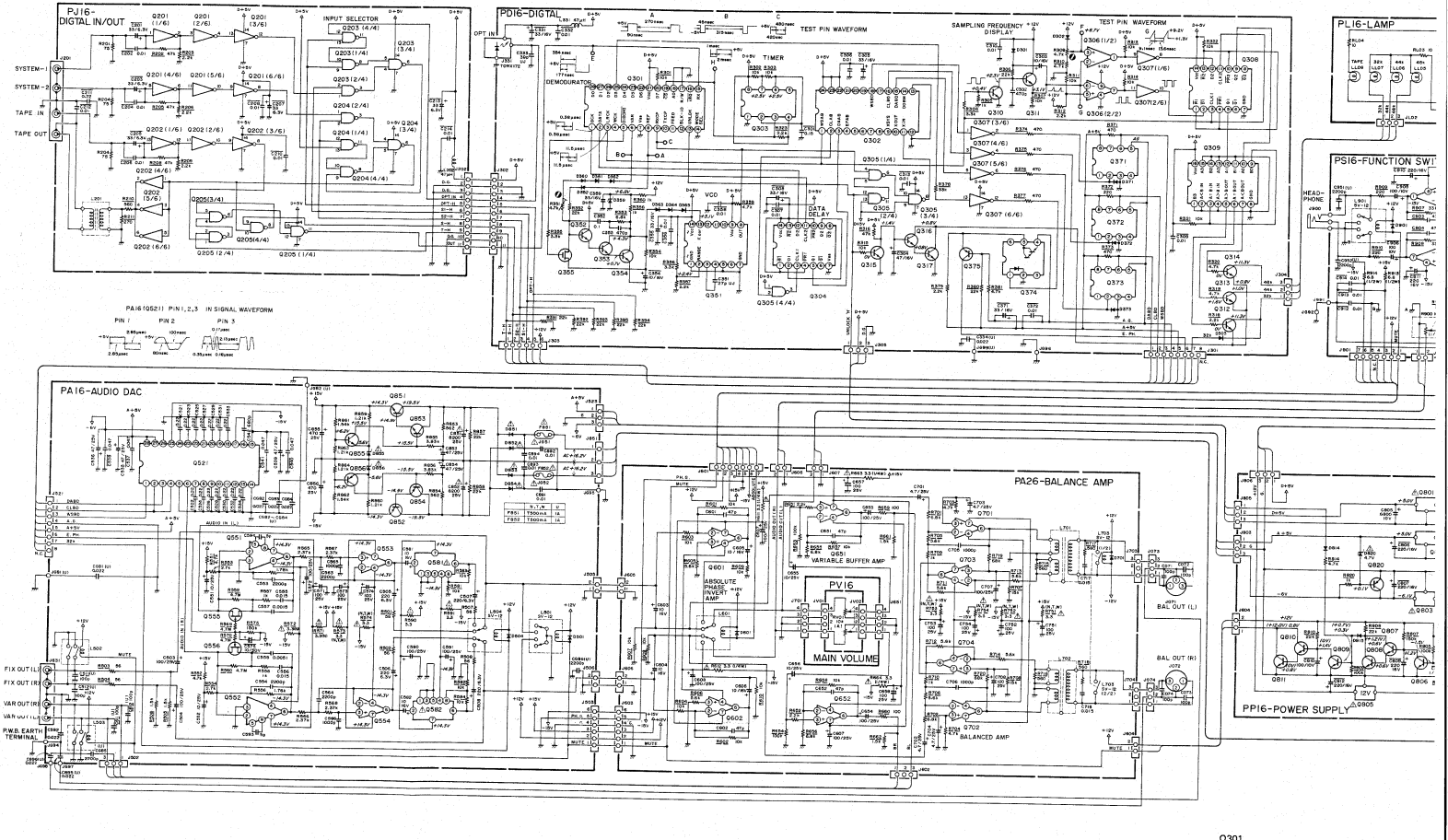
ccessories

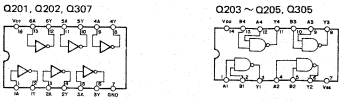
Audio connection cord (stereo) 2
Digital connection cord 1
Optical fiber cable 2

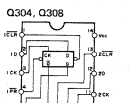
pecifications and features are subject to improvements without notice.

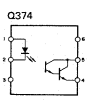
[MEMO]

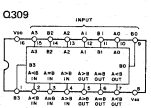
9. SCHEMATIC DIAGRAM

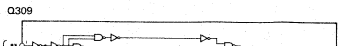


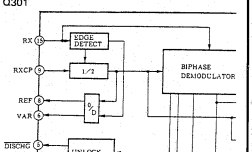


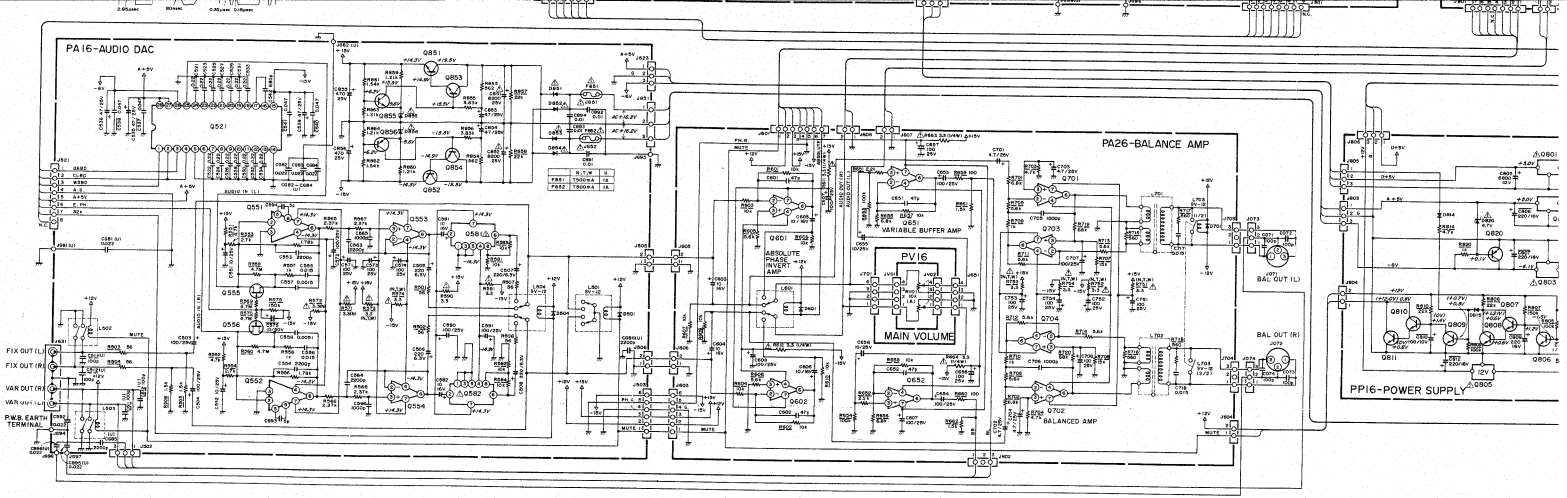




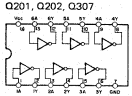




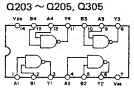




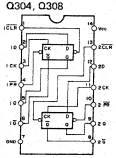
Q201, Q202, Q307



Q203 ~ Q205, Q305

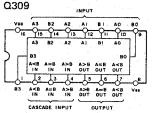


Q304, Q308

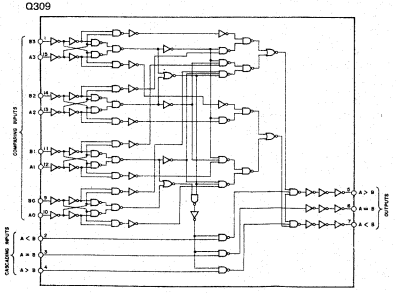


Q374

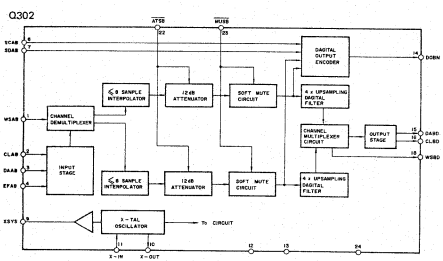
Q309



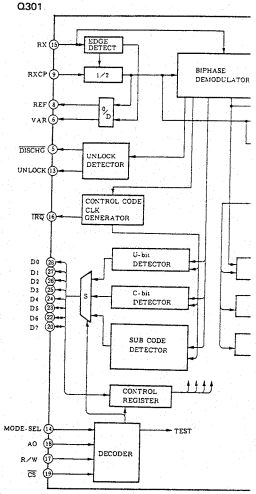
Q309



Q302



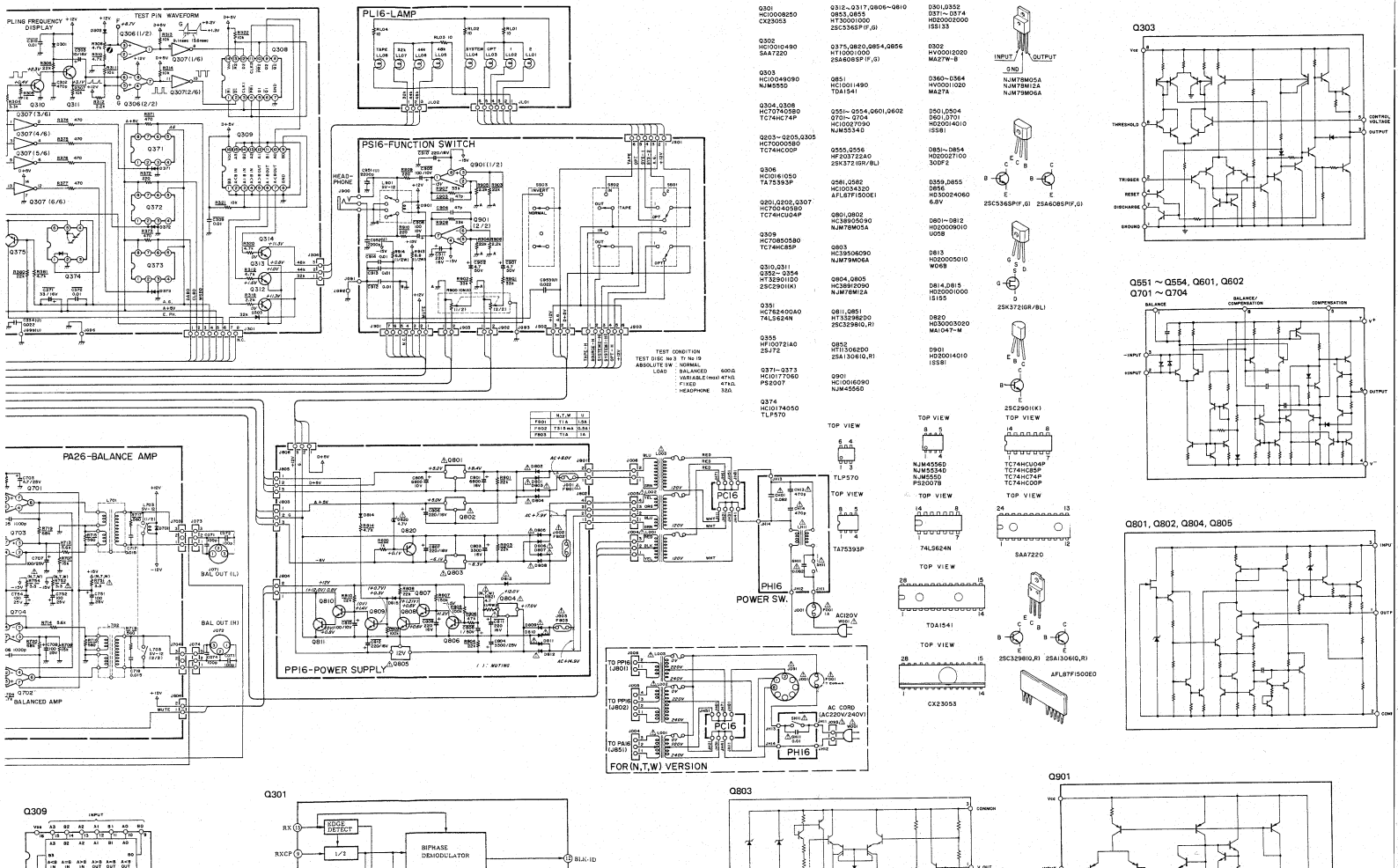
Q301

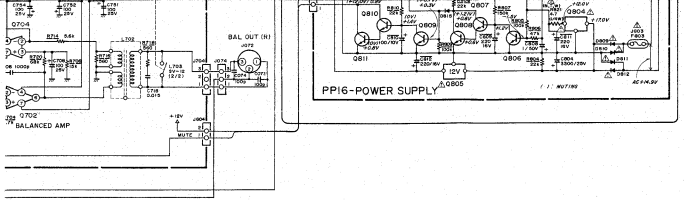


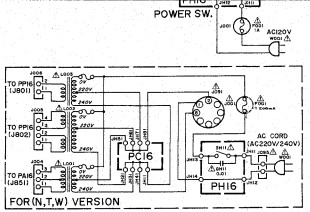
NOTE ON SAFETY :
Symbol ⚠ Fire or electrical shock hazard. Only original parts should be used to replace any part marked with symbol ⚠. Any other component substitution (other than original type), may increase risk of fire or electrical shock hazard.

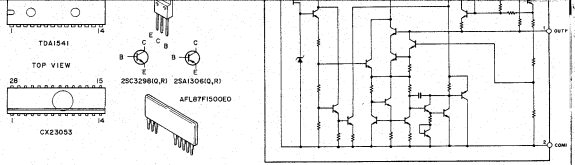
Components and wiring are subject to change for modification without notice.

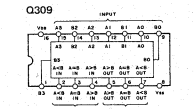
Model CDA-94

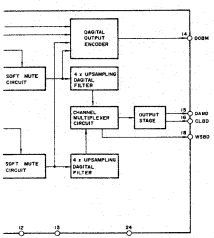

PLING FREQUENCY DISPLAY
TEST PIN WAVEFORM
PL16-LAMP
PS16-FUNCTION SWITCH
HEAD-PHONE
PA26-BALANCE AMP
BALANCED AMP
BAL OUT (L)
BAL OUT (R)
PP16-POWER SUPPLY
PH16
POWER SW.
AC120V
AC CORD (AC220V/240V)
TO PP16 (J801)
TO PP16 (J802)
TO PA26 (J851)
PC16
FOR(N,T,W) VERSION
TEST CONDITION
TEST DISC No.3 Tr No.19
ABSOLUTE SW. : NORMAL
LOAD : BALANCED 600Ω
: VARIABLE (max) 47kΩ
: FIXED 47kΩ
: HEADPHONE 32Ω
Q301
HC10008250
CX23053
Q302
HC10010490
SAA7220
Q303
HC10049090
NJM5532
Q304,Q308
HC70740580
TC74HC74P
Q306
HC10016050
TA75393P
Q309
HC70850580
TC74HC85P
Q310,Q311
Q352~Q354
HT32901DO
2SC2901(K)
Q351
HC76240A0
74LS624N
Q355
HFI10072A0
2SJ72
Q374
HC10174050
TLP570
Q312~Q317,Q806~Q810
Q853,Q855
HT30001000
2SC5336SP(F,G)
Q375,Q820,Q854,Q856
HT10001000
2SA608SP(F,G)
Q851
HC10011490
TDA1541
Q551~Q554,Q601,Q602
Q701~Q704
HC10027090
NJM5534D
Q555,Q556
HF20372A0
2SK372(GR/BL)
Q581,Q582
HC10034320
AFL87F1500E1
Q801,Q802
HC38905090
NJM78M05A
Q803
HC39506090
NJM79M06A
Q804,Q805
HC38912090
NJM78M12A
Q811,Q851
HT33298D0
2SC3298(Q,R)
Q852
HTII3062D0
2SA1306(Q,R)
Q901
HC10016090
NJM4556D
Q371~Q373
HC10177060
PS2007
D301,D352
D371~D374
HD20002000
ISS133
D302
HV00012020
MA27W-B
D360~D364
HV00011020
MA27A
D501,D504
D601,D701
HD20014010
ISS81
D851~D854
HD20027100
30DF2
D359,D855
D856
HD30024060
6.8V
D801~D812
HD20009010
U08B
D813
HD20005010
W06B
D814,D815
HD20001000
IS155
D820
HD30003020
MA1047-M
D901
HD20014010
ISS81
INPUT
OUTPUT
GND
NJM78M05A
NJM78M12A
NJM79M06A
2SC536SP(F,G)
2SA608SP(F,G)
2SK372(GR/BL)
2SC2901(K)
NJM4556D
NJM5534D
NJM5560
PS2007B
TLP570
TA75393P
74LS624N
SAA7220
TDA1541
2SC3298(Q,R)
2SA1306(Q,R)
AFL87F1500E0
CX23053
Q303
Q551~Q554, Q601, Q602
Q701~Q704
Q801, Q802, Q804, Q805
Q309
Q301
Q803
Q901

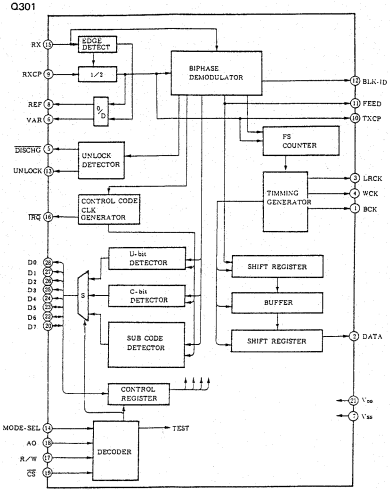


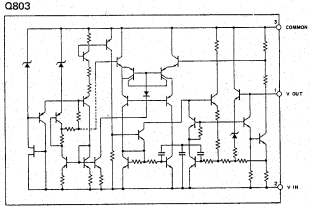


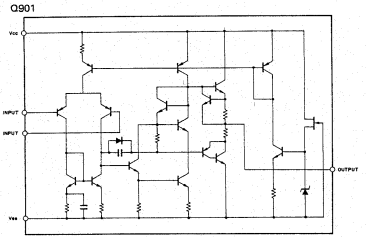












"SERVICE INFORMATION IS FOR USE BY QUALIFIED PERSONNEL ONLY – ANY MISADJUSTMENT OR MISALIGNMENT MAY BE TREATED AS A NON-WARRANTY REPAIR BY ANY MARANTZ SERVICE CENTRE – "

Kind of Common Parts

RESISTOR

R*** (1) GD05 - - - 140, Carbon film fixed resistor, ±5% 1/4W
R*** (2) GD05 - - - 160, Carbon film fixed resistor, ±5% 1/6W

C* : CERAMIC CAP.**

(1) DD1 - - - - 370, Ceramic condenser, disc type (titan condenser) Temp. coeff. P350 ~ N1000 50V

C* : CERAMIC CAP.**

(1) DK16 - - - 300, High dielectric constant ceramic condenser, disc type (titan variable) Temp. chara. 2B4 50V

C* : ELECTROLY CAP. (⧧) / FILM CAP. (⇌)**

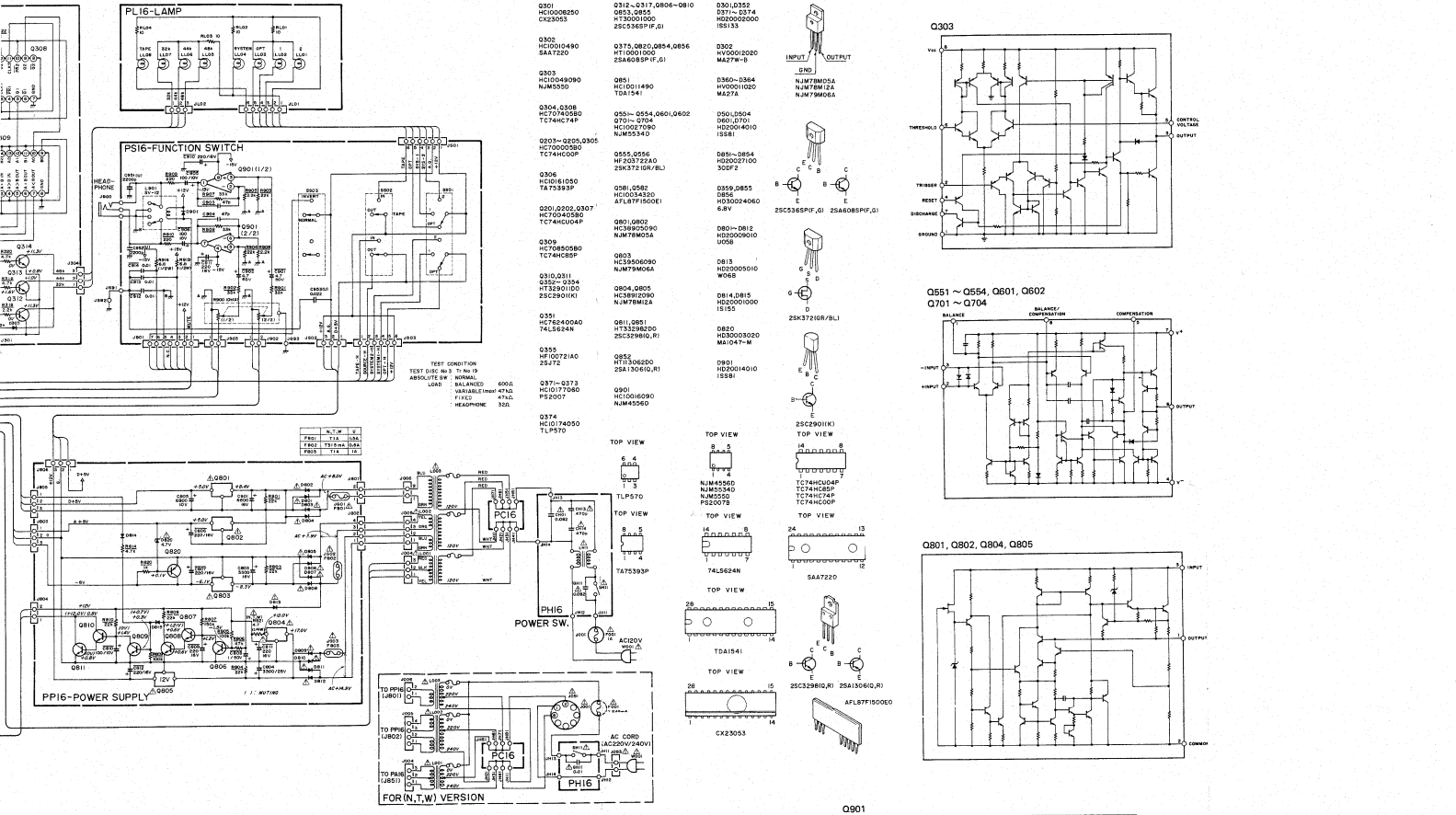
(1) EA - - - - - - 10, Electrolytic condenser, one-way lead type, tolerance ±20%
(2) DF15 - - - 350, Plastic film condenser, one-way type, Mylar, ±5% 50V

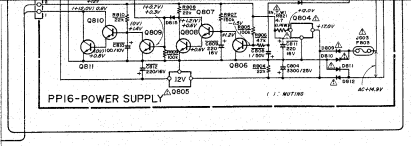
* In case of ordering the common parts, please establish the correct parts number of 10 figures by the procedure "ASSIGNMENT OF COMMON PARTS CODES"

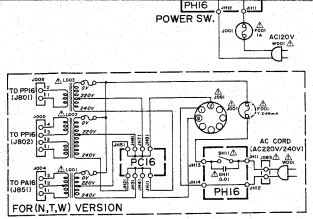
MZ 1773

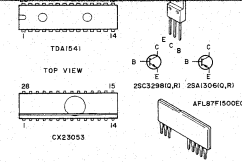
r modification without notice.

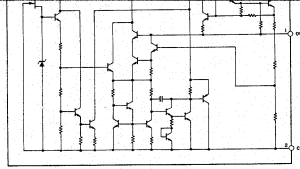
Model CDA-94


PL16-LAMP
PS16-FUNCTION SWITCH
PP16-POWER SUPPLY
PH16
POWER SW.
PC16
AC120V
AC CORD (AC220V/240V)
FOR(N,T,W) VERSION
TEST CONDITION
TEST DISC No 3 Tr No 19
ABSOLUTE SW NORMAL
LOAD BALANCED 600Ω
VARIABLE(max) 47kΩ
FIXED 47kΩ
HEADPHONE 32Ω
TOP VIEW
TLP570
TA75393P
NJM4556D
NJM5534D
NJM5558
PS2007B
74LS624N
SAA7220
TDA1541
2SC3298(Q,R)
2SA1306(Q,R)
CX23053
AFL87F1500E0
INPUT
OUTPUT
GND
NJM78M05A
NJM78M12A
NJM79M06A
2SC536SP(F,G)
2SA608SP(F,G)
2SK372(GR/BL)
2SC2901(K)
TC74HCU04P
TC74HC85P
TC74HC74P
TC74HC00P
Q303
CONTROL VOLTAGE
Q551 ~ Q554, Q601, Q602
Q701 ~ Q704
BALANCE/ COMPENSATION
Q801, Q802, Q804, Q805
Q301
Q803
Q901

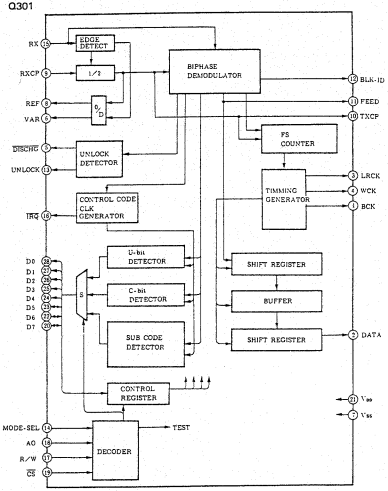




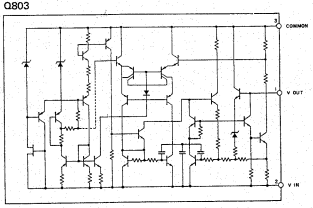




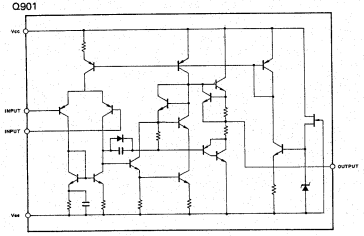
Q301



Q803



Q901



"SERVICE INFORMATION IS FOR USE BY QUALIFIED PERSONNEL ONLY – ANY MISADJUSTMENT OR MISALIGNMENT MAY BE TREATED AS A NON-WARRANTY REPAIR BY ANY MARANTZ SERVICE CENTRE – "

Kind of Common Parts

RESISTOR

R*** (1) GD05 · · · 140, Carbon film fixed resistor, ±5% 1/4W
R*** (2) GD05 · · · 160, Carbon film fixed resistor, ±5% 1/6W

C*** : **CERAMIC CAP.**
(1) DD1 · · · · 370, Ceramic condenser, disc type (titan condenser) Temp. coeff. P350 ~ N1000 50V

C*** : **CERAMIC CAP.**
(1) DK16 · · · 300, High dielectric constant ceramic condenser, disc type (titan variable) Temp. chara. 2B4 50V

C*** : **ELECTROLY CAP. (⧧) / FILM CAP. (⥤)**
(1) EA · · · · · · 10, Electrolytic condenser, one-way lead type, tolerance ±20%
(2) DF15 · · · 350, Plastic film condenser, one-way type, Mylar, ±5% 50V

* In case of ordering the common parts, please establish the correct parts number of 10 figures by the procedure "ASSIGNMENT OF COMMON PARTS CODES"

MZ 1773